

541.506 1 (7173) 1916.2

## SECTION VII.—WEATHER AND DATA FOR THE MONTH.

### THE WEATHER OF THE MONTH.

P. C. DAY, Climatologist and Chief of Division.

[Dated: Weather Bureau, Washington, April 1, 1916.]

#### PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for the month at the several stations, with the departures from the normal, are shown in Tables I and III.

For the month as a whole the mean barometric pressure was below the normal in the eastern Canadian Provinces, the New England and Atlantic Coast States, east of the Appalachian Mountains, and the coastal portions of Washington, Oregon, and northern California, but in all other sections it was above the normal. The negative departures as a rule were small, the greatest values appearing along the southern New England coast, but, on the other hand, the positive departures were quite marked in the western Plains States and the northern Rocky Mountain region.

The month opened with relatively high pressure throughout practically all sections of the country, except in New England and the eastern Canadian Provinces, where it was near or slightly below the normal. The extensive high pressure area which covered the greater part of the country was replaced in most sections by somewhat lower pressure toward the middle of the first decade; but pressure above the normal continued generally throughout the second decade, except for an occasional low area which crossed the country. However, during the third decade several rather extensive and well-defined low and high pressure areas followed one another at rather infrequent intervals from the far West to the Atlantic. The month closed with relatively low pressure in all sections, except in the extreme northern portion of the Plains States, the upper Mississippi Valley, and the Canadian Provinces to the northward, where it was near or somewhat above normal.

The distribution of the highs and lows was generally favorable for westerly winds in New England, the Middle Atlantic States, and Lake region, northwesterly in the Ohio and Mississippi Valleys and Plains States, and northerly in the central Gulf States. Elsewhere variable winds prevailed.

#### TEMPERATURE.

The month opened with temperature above the average in the Atlantic Coast States but with low readings in the central and western districts. The cold area moved slowly eastward and temperatures below the normal prevailed in most sections east of the Rocky Mountains until the middle of the first week, freezing weather extending to the Gulf coast and northern Florida. Toward the latter part of the week a second cold wave appeared in the Northwest and extended into the lower Missouri Valley and to the eastward, reaching the northeastern districts by the end of the week.

During the early part of the second week the temperature was above the average in the South and over the

Plains States, but colder weather obtained along the northern border, and during the next few days an area of low temperature moved from the Northwest southward to the Atlantic. Warmer weather appeared in the West about the end of the second week and gradually overspread the country to the eastward, but colder weather followed during the next few days, which in turn gave way to much warmer from the Mississippi Valley eastward, although it continued cold in the northeast. No marked changes in temperature occurred during the fourth week until near its end, when colder weather obtained in the eastern and northeastern districts. The month closed somewhat colder than average in the eastern and slightly warmer in the western districts.

For the month as a whole temperatures were below the normal in New England, the Lake region, and central valleys and above in the far western and southwestern States.

*Extremes of temperature.*—The extremes of temperature were generally well within the limits of previous years, except about the middle of the month, when the highest previously recorded in February were approached or equaled in portions of California and the Plains States and during the latter part of the month in southern Texas. Freezing weather occurred in all parts of the country at some time during the month, except southern Florida, portions of California, and southwestern Arizona, while zero temperatures were experienced as far south as southern Pennsylvania, the central valley States, southwestern Kansas, and at practically all stations in the Rocky Mountain region.

#### PRECIPITATION.

The month opened with stormy weather but mostly light precipitation in the Eastern States, while throughout the central portion of the country fair weather prevailed, but on the 2d and 3d heavy sleet and snow occurred in the New England and Middle Atlantic States. During the first week a low-pressure area moved from the North Pacific to the Atlantic Ocean, accompanied by generally light precipitation, except in portions of Washington, Oregon, and Idaho, where heavy snow fell. However, toward the latter part of the week fair weather prevailed generally in the South.

Early in the second week fairly heavy rain fell in the southeastern States and during the latter part moderate precipitation occurred in portions of Texas and thence northeastward to the Ohio Valley. In the northern part of the country light snow occurred almost daily during this week. Fair weather prevailed in practically all sections the third week, except for frequent light snows from the Great Lakes eastward in the latter half. During the first half of the fourth week a low-pressure area moved from the South Pacific across the country, accompanied by light precipitation in the Southwest, moderate rain in the Southern States, except heavy along the coast, and snow in the Ohio Valley and Lake region. Another storm area moved from the Pacific to the South Atlantic coast the latter part of the month, accompanied by moderate precipitation and thunderstorms in the southeastern States. The month closed with light rain in the North

Pacific and northern Plains States and from the Great Lakes southward and southeastward.

The precipitation for the month as a whole was quite generally below the average, except in the western portions of Washington and Oregon, southern Idaho, most of New York, New Jersey, and the New England States. In much of Texas, eastern Colorado, and New Mexico either no precipitation or only a trace occurred; and throughout most of the remainder of the western Plains States and eastern Rocky Mountain slope the precipitation was less than half an inch.

**Snowfall.**—There was a good snow cover in the extreme Northern States throughout most of the month, but in much of the winter-wheat belt there was little snow covering and some damage resulted. In the extreme Northwestern States unusually heavy snows occurred, and at the close of the month large quantities had accumulated in the higher mountain regions; thus prospects of a plentiful supply of water for the coming growing season were good in nearly all portions of the western mountain regions.

#### GENERAL SUMMARY.

The weather for the month was generally favorable for outdoor operations in most of the Southern States, but in the North it was generally cold and disagreeable. The cold weather about the middle of the month did some damage to truck in the South and to citrus bloom in northern Florida.

The weather was favorable for a good ice harvest of excellent quality in the northeastern States, but farther south the amount harvested during the winter is, on the average, less than will be required. The month closed with most of the Great Lakes harbors covered with ice. On the Mississippi and Missouri Rivers and their tributaries, however, but little ice remained except in the northern portions. Truck plantings in the South were generally later than usual, and in the lower Mississippi Valley farm operations were delayed by floods.

*Average accumulated departures for February, 1916.*

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	°F.	°F.	°F.	Inch.	Inch.	Inch.	Per cent.		Per cent.	
New England.....	22.6	-3.1	+ 1.7	4.11	+0.70	-1.30	6.6	+1.3	76	+ 1
Middle Atlantic.....	31.2	-1.7	+ 4.7	3.94	+0.20	-1.30	6.4	+0.9	71	- 3
South Atlantic.....	48.1	+0.4	+ 9.0	3.28	-0.90	-3.20	4.1	-1.3	72	- 4
Florida Peninsula.....	65.7	-1.2	+ 5.2	1.65	-1.00	-2.70	3.5	-0.8	78	- 4
East Gulf.....	49.7	-1.1	+ 6.4	2.96	-2.00	-3.30	4.5	-1.1	79	- 6
West Gulf.....	51.2	+1.6	+ 6.4	0.56	-2.30	-0.50	4.6	-1.0	69	- 5
Ohio Valley and Tennessee.....	33.1	-2.6	+ 4.1	2.26	-1.30	+1.00	6.5	+0.3	75	+ 1
Lower Lakes.....	20.3	-4.3	+ 2.5	2.47	-0.10	+0.20	7.3	+0.5	81	+ 1
Upper Lakes.....	16.1	-3.0	+ 0.3	0.82	-1.00	+0.20	7.5	+1.3	81	+ 1
North Dakota.....	6.8	-0.2	-10.2	0.40	-0.20	+0.20	4.2	-0.8	85	+ 5
Upper Mississippi Valley.....	23.0	-1.6	+ 1.3	0.66	-1.10	+1.70	5.7	+0.5	80	+ 3
Missouri Valley.....	25.0	+0.6	+ 2.5	0.49	-0.60	-1.80	4.7	-0.5	81	+ 6
Northern slope.....	23.9	+2.4	-10.9	0.59	-0.20	+0.30	5.1	0.0	72	+ 1
Middle slope.....	34.7	+2.3	0.8	0.17	-0.60	+0.20	3.8	-0.6	68	+ 1
Southern slope.....	50.1	+4.6	+ 7.6	0.01	-0.90	-1.10	3.2	-1.6	48	-14
Southern Plateau.....	46.8	+1.9	+ 0.6	0.18	-0.50	+1.80	3.0	-0.6	47	+ 3
Middle Plateau.....	36.5	+3.5	0.7	0.74	-0.40	+1.50	5.2	+0.1	72	+ 2
Northern Plateau.....	33.9	+1.3	7.1	2.26	+0.30	+1.10	6.8	+0.6	77	+ 8
North Pacific.....	43.8	+2.5	5.0	2.06	+2.20	+1.20	6.7	-0.4	83	+ 3
Middle Pacific.....	52.9	+3.9	2.2	3.31	-1.10	+5.10	6.3	+0.7	79	+ 3
South Pacific.....	56.6	+4.0	2.2	1.63	-0.90	+7.40	5.1	+0.8	76	+ 7

#### WEATHER CONDITIONS IN THE NORTH ATLANTIC DURING FEBRUARY, 1915.

The data presented are for February, 1915, and comparison and study of the same should be in connection with those appearing in the REVIEW for that month. Chart IX (XLIV-20) shows for February, 1915, the averages of pressure, temperature, and the prevailing direction of the wind at Greenwich mean noon, together with the locations and courses of the more severe storms of the month.

#### PRESSURE.

The mean atmospheric pressure for the month was in many respects considerably different from the normal as shown on the Meteorological Chart of the North Atlantic for February. The Azores high was about 10 degrees east of its usual position, but was of normal intensity. Two highs were located in the eastern part of the United States, the first with a crest of 30.15 inches central near Charlotte, N. C., the eastern boundary extending along the coast from New York to northern Florida. The second high, of limited extent and the same intensity, was central in northern New York, separated from the first by a slight depression. The greatest difference in the pressure conditions from the normal is shown in the position of the Icelandic low of 29.4 inches central near latitude 58° N., longitude 10° W., where the normal pressure is 29.7 inches and about 10 degrees southeast of its usual location.

#### STORMS.

The large difference in pressure and comparatively short distance between the Azores high and the Icelandic low were responsible for the unusual number of gales on that part of the ocean between the two great centers of action. In the waters west of the 50th meridian, the number of gales was, as a rule, above the normal, but in others the number was below. The month was noted for the large differences in general conditions between the first and last periods. A good example of this may be shown in the 5-degree square between the 45—50th parallels and the 10—15th meridians, where the normal percentage of gales of 48 miles per hour and over is 18. For February, 1915, gales were observed in this square on 14 days, a percentage of 50. Nine of these gales occurred in the first decade of the month, four in the second, and only one in the last eight days. In the waters adjacent to the American coast the number of gales was somewhat above the normal, and they were as a rule fairly well distributed throughout the month, although between the 30—40th parallels and west of the 60th meridian, where the percentage ranged from 11 to 29, they all occurred after the 16th.

Three storm tracks are shown on Chart IX, although there were a number of disturbances whose courses were either too irregular to chart or it was impossible to plot their positions accurately on account of lack of observations.

On February 1 a low (1 on Chart IX) was central near latitude 53° N., longitude 30° W. There were but few observations received north of the center and the heaviest winds evidently prevailed in the southwest quadrant, where several vessels reported west and northwest gales of from 50 to 75 miles per hour, with snow and hail. It then moved a short distance in a southwesterly direction, and on the 2d was near latitude 50°, longitude 33°. The steamship *Pretorian* (Brit.), about 5 degrees south of the center, reported a barometer reading of 27.83 inches, and the steamship *Oosterdyk* (Dutch), near by at the time, one of